IT Unit 3

Topic 1

# Organisations & Data Management

**Developing a RDBMS, p 45**

1. ***In which stage of the PSM does this occur?***This occurs in the development stage.
2. ***What is meant by referential integrity?***Referential integrity refers to the presence of data in foreign key.

**Testing the solution, p 49**

1. ***What is the purpose of testing?***The purpose of testing is to ensure the product is complete, and that the features and functions work correctly, and that the information produced is error free.
2. ***Distinguish between informal and formal testing.***Informal testing occurs during the development stage. As software developers create a solution, they are constantly testing to see if the solution behaves according to expectations. Formal testing involves testing the overall solution after it has been completed to see if it solves the problem. This type of testing is formalised with comprehensive documentation of each test and each test outcome.
3. ***What is a bench test?***A bench test forms part of the formal testing process in which sample data has been developed during design stage is used to determine how the solution behaves with a range of data.
4. ***What is a test plan and what are the benefits of having a test plan?***A test plan is used to allow testers to check each part of the solution to ensure its proper operation.
5. ***What is meant by user acceptance testing?***User acceptance testing means that the solution the developers have created meets the actual needs of the intended users. This process usually involves asking users to follow a series of steps to complete a task in the solution or interpreting the information contained in the output, then providing feedback to the developers.

**Testing procedure:**

The test plan is used to allow a systematic check of each part of the solution to ensure its proper operation. It involves six steps (three at design stage & three at development stage:

1. Decide on tests to be conducted (design stage).
2. Determine the test data (design stage).
3. Determine expected results (design stage).
4. Record results of testing (develop stage).
5. Correct any errors (develop stage).
6. Provide concluding statement (develop stage).

**Features to test:**

1. ***Testing table validation***
   1. ***What is the purpose of testing validation?***The purpose of testing validation is to ensure that data is accurate before it is entered via forms or queries that run. It is important that in the testing process to choose data that will test the boundaries of the validation rule as well as the data type and even the existence of the data.
   2. ***What is the rule of thumb in testing data values?***The rule of thumb in testing data values is to test a value before the value itself and one greater value than the value in the validation rule.
2. ***Testing the query selection criteria***
   1. ***In testing the queries, why must the test data be chosen carefully?***The test data must be chosen carefully to ensure that there are some records that should be returned by the query, some that should be rejected for failing to meet the first criterion even though they met the first criterion, some that fail to meet the second criterion after meeting the first criterion and finally some that miss both criteria.
3. ***Testing formulas and summary statistics***It is also critical to test formulas and summary statistics (such as ‘counts’ and ‘sums’) that occur in your queries. Choose appropriate test data so that it is easy to determine if the final result is accurate.
4. ***Testing sorting, primary & secondary***A key feature of the query is being able to display its results in an organised and useable manner (i.e. as information). These primary and secondary sorts have to be tested. The key is to demonstrate that a sort works alphabetically or numerically or even alphanumerically. You will need at least three test values to demonstrate this adequately.